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ABSTRACT

This report documents school districts that have adopted safer pest management policies, such as integrated pest management (IPM), in response to state requirements or as a voluntary measure that exceeds state law. It also documents the state of local school pest management policies and illustrates the opportunities that exist for better protection of children from pesticides in localities throughout the country. Includes a table listing school districts covered by state laws or voluntary policies. (EV)

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School districts nationwide adopt safer pest management policies

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Beyond Pesticides/

National Coalition Against the Misuse of Pesticides

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Are Schools Making the Grade?

School districts nationwide adopt safer pest management policies

By Cortney Piper and Kagan Owens

Across the United States, communities are taking action to protect children from school pesticide use by adopting state and local policies that require safer school pest management practices. These policies foster a school environment that is free from both pests and pesticides by providing long-term control of pests through an integrated pest management (IPM) program, utilizing cultural, biological and mechanical practices. While the definition of IPM can vary widely and, for many, incorporate the heavy use of pesticides, safety advocates call for least toxic pesticide use only as a last resort, and only coupled with pesticide use notification. In those communities that do not have such policies in place, students and school staff continue to be unknowingly exposed to the unnecessary use of toxic pesticides.

Overview of findings

This report documents the school districts that have adopted safer pest management policies in response to state requirements or as a voluntary measure that exceeds state law. It also documents the state of local school pest management policies and illustrates the opportunities that exist for better protection of children from pesticides in localities throughout the country.

Beyond Pesticides has identified 10,108 school districts, or 59 percent of the school districts in the U.S., in 37 states that have a policy with one or more of the following four criteria: (i) establish an integrated pest management (IPM) program; (ii) provide prior written notification of a pesticide application; (iii) post pesticide use notification signs; and, (iv) prohibit certain toxic pesticide applications. While this report does not evaluate whether all these schools are implementing these policies effectively, it does show the number of schools that have adopted some requirements, either through a state law or local school district policy, toward the protection of children from school pesticide use.

Of the approximately 17,000 school districts around the country:[5]

- 26.6% are required to have an IPM policy;
- 43.1% are required to provide prior written notification of pesticide use;
- 56.7% are required to post pesticide use notification signs for either indoor or outdoor applications; and,
- 18.9% have restrictions on certain pesticides.

The survey finds that state laws that only *recommend* the adoption of the four components are ineffective. Without protective federal or state law, the vast majority of school districts are unlikely to voluntarily adopt such measures. The state of Indiana serves as an exception to this finding, where 253 out of 289 school districts, or 88%, have voluntarily adopted a policy that includes IPM and prior notification of pesticide use.[6] In this instance, the threat of a state law proved to be highly effective in pushing school districts to adopt such pest management strategies. In 2001, the Indiana legislature decided that legislation would be put on hold pending adequate voluntary adoption by schools. A model policy, developed by the Indiana Pesticide Review Board with the input of child advocacy groups and school IPM experts and approved by the Indiana School Board Association, continues to be adopted across the state. Unfortunately, 12 percent of school districts are not protected in the state.

Methodology

The findings of this report are based on Beyond Pesticides' review of all state pesticide laws and local school district policies and programs that go beyond their state law. The information on school districts' policies was obtained from a survey of Beyond Pesticides' network of activists, policy makers, PTA's, state extension agents, pest management companies, and school administrators. Beyond Pesticides publicizes school pesticide policies to educate the public on these critical issues. As new policies are adopted and new information is generated, Beyond Pesticides will update this report.

Background

According to the National Academy of Sciences, children are among the least protected population group when it comes to pesticide exposure. The report finds that EPA generally lacks the data on children that is necessary to fully

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Table 1. U.S. School Districts With Key Pesticide Policies

School Pesticide Provision	Effected by State Mandate	Adopt Provision(s) Exceeding State Mandate	Adopt Voluntary Policy (no state law)	Total Required (state law + voluntary policy)
IPM	4,207 school districts	0 school districts	315 school districts + 5 schools	4,522 school districts + 5 schools
Prior Notification	7,076 school districts	7 school districts	259 school districts	7,335 school districts
Posting Signs	9,631 school districts	14 school districts	3 school districts	9,634 school districts
Use Restrictions	3,194 school districts	11 school districts	30 school districts + 2 schools	3,224 school districts + 2 schools

protect them.[1] Due to their small size, greater intake of air and food relative to body weight, developing organs and other unique characteristics, children are at higher risk than adults to pesticide exposure.

Symptoms of acute pesticide poisoning may include headaches, nausea, dizziness, memory loss, hyperactivity, moodiness, loss of coordination, respiratory problems, and inability to concentrate. Because the symptoms are quite common, poisoning can be difficult to diagnose, especially since the victim is often unaware of any exposure.

While schools are held to the highest academic standards possible, as a nation, advocates have said that schools falter with regard to enforcing the highest possible safety standards. The truth of the matter is, the two go hand in hand. School children are developing motor skills, learning to speak, read and write, and mastering socially acceptable behavior. The most commonly used pesticides are neurotoxic and affect children's ability to learn and process information, yet they are frequently applied to classrooms, cafeterias, gyms, ballfields, playgrounds, or even infirmaries. Animal studies link pesticides in the organochlorine, organophosphate and pyrethroid families to hyperactivity. Organophosphates are also linked to developmental delays, behavioral disorders and motor dysfunction in animal studies.[2] Academic excellence cannot be expected if children are not provided an environment that grants them the ability to grow physically.

Children's exposure to pesticides at school occurs as a result of applications made immediately before children arrive and sometimes while they are present. These chemicals have a tendency to end up where no one really wants them – in indoor air, on carpets, tables and toys, and on the grass where students play. Exposure occurs from breathing contaminated air or touching contaminated surfaces. The residues can remain for days and sometimes break down to other dangerous compounds.[3] Pesticides can be harmful to people even when used according to label directions.

Federal legislation, the *School Environment Protection Act* (SEPA), addresses these issues and provides incentives for schools to adopt safer pest management practices. Although there is opposition from some in the agricultural and chemical industry, the bill passed the U.S. Senate twice in 2001 and 2002.

Without a federal law regulating school pesticide use, it is up to states and local school districts to provide children the protection they need from toxic chemical exposure while at school. According to Beyond Pesticides' *The Schooling of State Pesticide Laws—2002 Update*, thirty-three states have taken some action to step in and provide protective action to address pesticide use in, around or near their schools.[4] These include a mixture of pesticide restrictions and pesticide use notification. Because state protection is uneven across the country, many local school districts have adopted similar, and sometimes more restrictive, pest management policies.

In order to effectively manage pests without a reliance on pesticides, local policies and program must, according to pest managers, address the following issues.

Integrated Pest Management (IPM)

Schools often provide an excellent habitat for certain pests. Cockroaches find a lot of good food stuffed away in forgotten lunch bags. Head lice find it easy to move from host to host where children and their clothing are kept close together all day. Weeds that prefer compacted soils and out compete healthy grasses thrive on school athletic fields. Fortunately,

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learning to solve pest problems without chemical dependency involves simple common sense.

A good IPM program can eliminate the unnecessary application of synthetic, volatile pesticides in schools. In most instances, not only has IPM decreased the use of pesticides and thus improved the health and safety of children, but it also decreases the cost of pest management and yields better results.[7] The main elements of a successful IPM program include: 1) monitoring to establish whether there is a pest problem; 2) identifying the causes of the pest problem; 3) addressing the cause by changing conditions to prevent problems; 4) utilizing pest suppression techniques, if necessary, that are based on mechanical and biological controls; and, 5) only after non-toxic alternatives have been tried and exhausted, use of a least toxic pesticide.

Non- and least toxic pest control products are a major growth area and new materials and devices are increasingly available in the marketplace. Instead of addressing the cause of pest problems, many pesticides only treat the symptoms, without changing the underlying problems that create an environment conducive to their existence. Pesticides are often ineffective over the long term and the most common pests are now resistant. Efforts to create a healthy soil and eliminate pests' food, water, shelter and entry will eliminate the pest problem.

Figure 1.
U.S. School Districts Required to Adopt IPM

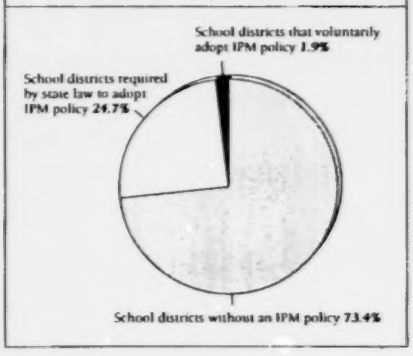
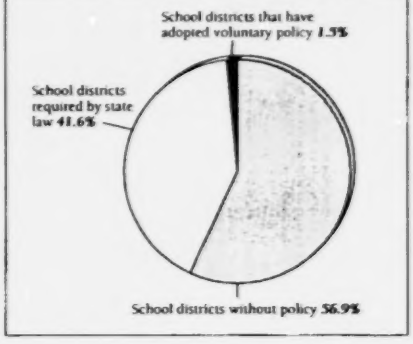

School districts that voluntarily adopt IPM policy 1.9%
School districts required by state law to adopt IPM policy 24.7%
School districts without an IPM policy 73.4%

Figure 2.
U.S. School Districts That Require Prior Notification


School districts that have adopted voluntary policy 1.5%
School districts required by state law 41.6%
School districts without policy 56.9%

A total of 4,522 school districts and five individual schools, or 26.6 percent of the 17,000 U.S. school districts, are required to adopt IPM. (See Figure 1.) Overall, 4,207 school districts, or 24.7 percent, are state mandated to adopt IPM[8] and 315 school districts and five individual schools, or 1.9 percent, have voluntarily adopted an IPM policy. Of the voluntary policies, 302 school districts and four individual schools nationwide define IPM in their policy as the use of least-toxic pest management practices, emphasizing non-chemical methods of pest control or pesticide use as a last resort. It is important to note that 253 of the voluntary school IPM programs represent Indiana school districts. Subtracting the Indiana schools, only 62 school districts and five individual schools have voluntarily adopted an IPM policy. An additional 40 school districts and eight schools do not have an official IPM policy, but claim that IPM strategies are being implemented.

Approximately 400 school districts and individual schools hire pest management companies, such as Praxis, EnviroSafe, and Get Set Inc.,[9] that rely on biological control methods to implement their IPM program. Because some contractors chose not to release the names of their clients, Beyond Pesticides could only document 29 school districts and three individual schools in this category. These firms have experienced unprecedented success controlling unwanted pests by using natural alternatives to pesticides, which typically cost less than conventional pest control methods. One of the best examples of these programs is Lewis Cass Technical High School in Detroit, Michigan, a building that is over one hundred years old. The program, started by Praxis, has had tremendous success with non-toxic pest management for cockroaches and rats. Because toxic pesticides are not used, students at the school have taken the lead in running the school's pest management program. The students enjoy knowing they are making a difference while at the same time creating a safe and healthy school environment.

There are also an additional 2,335 school districts in four states with state laws that *recommend* schools adopt an IPM program.[10] Of these, only 28 school districts and two individual schools have reported following their state's recommendation, illustrating that even when state legislation is passed with a recommendation for school IPM, it is ineffective in actually moving local schools in that direction. This shows the significance in federal and state legislation mandating such a requirement.

Prior written notification

Written notification provided prior to each pesticide use is the best way to ensure that all parents, children and school staff are aware and warned about potential exposure. There are two ways to provide this type of notification—a registry, where individuals must sign on to a list, or universal notification, where everyone in the school's database is automatically provided advance notice through a flier carried home by students. There are also notification systems that incorporate elements of both.

Notification-based registries are a less effective means of notifying people because it affords only those who are already knowledgeable about toxic exposure the opportunity to be informed about school pesticide use. Registries also tend to be more costly and time consuming for the school because of the time associated with list management.

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Table 2. U.S. School Districts' Pesticide Policy

Districts Covered by State Laws and Voluntary Policies and Programs that Go Beyond State Laws[1]	*IPM*	*Prior Notice*	*Posting*	*Use Restrictions*
ALABAMA (no state law)				
Auburn City Schools	V			
Prichard School District	V			
ALASKA (53 school districts covered by state law)		X	X	X
Anchorage School District	V	E	E	E
Fairbanks North Star Borough School District	V			
ARIZONA (222 school districts covered by state law)		X	X	
Crown Point Community School, Navajo Indian Reservation	N			
Dragonfleye Charter School	V			V
Kyrene School District	V			
Lake Valley School, Navajo Indian Reservation	N			
Mariano Lake School, Navajo Indian Reservation	N			
CALIFORNIA (989 school districts covered by state law)	R	X	X	
Arcata School District	V			V
Alameda School District	V			V
Capistrano Unified School District	V			
Fremont Unified School District	N			
Fresno Unified School District	V			
Larkspur School District	V		E	V
Los Angles Unified School District	V	E	E	V
Mendocino Unified School District	V			
Nevada County Schools	V		E	V
Novato Unified School District	V			V
Oakland Unified School District	V			V
Oxnard Union High School District	V			
Peabody Charter School, Santa Barbara School District	N			
Pine Tree School, Canyon County School District	V			
Placer Hills Unified School District	N			
San Bernardino City Unified School District	V			
San Diego Unified School District	V			
San Francisco Unified School District	V	E	E	V
San Jose Unified School District	V			
Santa Ana Unified School District	V			
Sacramento City Unified School District	V			
Ventura Unified School District	V	E		V
Vista de las Cruces, Santa Barbara School District	N			
COLORADO (176 school districts covered by state law)			X	
Boulder Valley School District	N			
CONNECTICUT (167 school districts covered by state law)	R	X	X	X
John Read Middle School	V			
FLORIDA (67 school districts covered by state law)	X		X	
Brevard County Public Schools		V		V
GEORGIA (183 school districts covered by state law)			X	
DeKalb County Schools	N			
ILLINOIS (896 school districts covered by state law)	X	X	X	
INDIANA (289 school districts covered by state law)			X	
253 districts adopted IN model policy[2]	V	V		
IOWA (376 school districts covered by state law)			X	
Cedar Falls Community Schools	V	V		V

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Table 2. U.S. School Districts' Pesticide Policy

Districts Covered by State Laws and Voluntary Policies and Programs that Go Beyond State Laws[1]	*IPM*	*Prior Notice*	*Posting*	*Use Restrictions*
IOWA *continued*				
Davenport Community Schools	V	V		
Lewis Central Schools	V	V		
Sioux Central Community Schools	V	V		
Woodward-Granger Community Schools	V	V		
KANSAS (no state law)				
Altamont Grade School, Unified School District 506				V
KENTUCKY (176 school districts covered by state law)	X	X	X	
LOUISIANA (66 school districts covered by state law)	X	X		X
MAINE (298 school districts covered by state law)	X	X	X	
Five Town Community School District		E		
MARYLAND (24 school districts covered by state law)	X	X	X	
Lime Kiln Middle School, Howard County Public Schools				N
St. Mary's County Public Schools			E	E
Triadelphia Ridge Elementary School, Howard County Public Schools				N
MASSACHUSETTS (303 school districts covered by state law)	X	X	X	X
MICHIGAN (169 school districts covered by state law)	X	X	X	X
Allendale Public Schools	N[3]			N[3]
Ann Arbor Public Schools				E
Bangor Public Schools	N[3]			N[3]
Birmingham Public Schools	N[3]			N[3]
Coopersville Area Public Schools	N[3]			N[3]
Detroit Cass Tech. H.S., Detroit Public Schools	N[3]			N[3]
East Jordan Public Schools	N[3]			N[3]
Emerson Elem., Saginaw Public Schools	N[3]			N[3]
Fremont Public Schools	N[3]			N[3]
Fruitport Community Schools	N[3]			N[3]
Godwin Heights Public Schools	N[3]			N[3]
Grand Haven Area Public Schools	N[3]			N[3]
Grand Rapids Public Schools	N[3]			N[3]
Greenville Public Schools	N[3]			N[3]
Harbor Springs Public Schools	N[3]			N[3]
Kalamazoo Public Schools	N[3]			N[3]
Muskegon Area Intermediate School District	N[3]			N[3]
Paw Paw Public Schools	N[3]			N[3]
Reeths-Puffer Schools	N[3]			N[3]
Rockford Public Schools	N[3]			N[3]
Saginaw H.S., Saginaw Public Schools	N[3]			N[3]
Saranac Community Schools	N[3]			N[3]
Shelby Public Schools	N[3]			N[3]
Sturgis Public Schools	N[3]			N[3]
Sylvan Christian School	N[3]			N[3]
Washtenaw Intermediate School District				E
Waverly Community Schools	N[3]			N[3]
West Ottawa Public Schools	N[3]			N[3]
MINNESOTA (349 school districts covered by state law)		X		
Hopkins School District 270	V	E		
Willmar Public Schools	V		V	V
MONTANA (457 school districts covered by state law)	R		X	
NEW HAMPSHIRE (176 school districts covered by state law)			X	X[4]
NEW JERSEY (575 school districts covered by state law)	X	X	X	X
Haddonfield Schools				E

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Table 2. U.S. School Districts' Pesticide Policy

Districts Covered by State Laws and Voluntary Policies and Programs that Go Beyond State Laws[1]	*IPM*	*Prior Notice*	*Posting*	*Use Restrictions*
NEW MEXICO (89 school districts covered by state law)		X	X[1]	X
Albuquerque Independent School District	V			
Santa Fe Public Schools	V			E
NEW YORK (722 school districts covered by state law)	R	X	X	
Albany City School District	N			
Baldwin Union Free School District	V			V
Ballston Spa School District	V			V
Buffalo School District	V			
Fulton City School District	V			V
Great Neck Public Schools	V			V
Greenwich Central School District	V			V
Locust Valley Schools	V			
New York City Schools	V			V
North Syracuse School District	V			
Williamsville Public Schools	V			
NORTH CAROLINA (no state law)				
Chapel Hill-Carrboro City Schools	N			
Pitt County Schools	V			
OHIO (614 school districts covered by state law)			X	
Athens City Schools	V			
Beavercreek School District	N			N
Brookville Local Schools	N			N
Mad River Local Schools	N			N
Northmont City School District	N			N
Perrysburg Schools	N			N
Twin Valley Schools	N			N
Worthington City Schools	V			
Yellow Springs Schools	N			N
OREGON (no state law)				
Eugene Public Schools	V			
Portland Public Schools	V	V	V	V
PENNSYLVANIA (501 school districts covered by state law)	X	X	X	X
Central Dauphin School District				E
Philadelphia School District				E
Pittsburgh School District				E
Radnor Township School District				E
RHODE ISLAND (37 school districts covered by state law)	X	X	X	
South Carolina (no state law)				
Richland School District 2	V	V	V	
School District 5 of Lexington & Richland Counties	V			
TENNESSEE (no state law)				
Memphis City Schools	V			
Nashville Metro Public Schools	V			
TEXAS (1040 school districts covered by state law)	X	X	X	X
UTAH (no state law)				
Granite School District	N			
VERMONT (259 school districts covered by state law)			X	
Burlington			E	
VIRGINIA (no state law)		R	R	
Arlington County Public Schools	N			
Fairfax Public Schools	N			
Montgomery County Public Schools	N			

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Table 2. U.S. School Districts' Pesticide Policy

Districts Covered by State Laws and Voluntary Policies and Programs that Go Beyond State Laws[1]	*IPM*	*Prior Notice*	*Posting*	*Use Restrictions*
WASHINGTON (296 school districts covered by state law)		X	X	
Bainbridge Island School District	V		E	V
Carl Sandburg Elementary School, Lake Washington School District	V	E	E	V
Lincoln Elementary School, Olympia School District	V			V
Mercer Island School District	V			V
Oak Harbor School District	V		E	V
Olympia School District	V		E	V
Seattle School District	V		E	V
Sedro-Woolley School District No. 101	V		E	V
Shoreline School District	V			V
South Whidbey School District	V			V
Vancouver School District	V		E	V
Vashon Island School District	N			
WEST VIRGINIA (55 school districts covered by state law)	X	X		X
Cabell County Schools				E
WISCONSIN (428 school districts covered by state law)			X	
Madison Metropolitan School District	V			
Waterford Graded School District	V			
WYOMING (49 school districts covered by state law)		X	X	

X = provision in state law

R = state law recommends schools adopt provision

V = provision in school policy (voluntary)

E = school policy provision exceeds state law

N = school implementing but does not have official policy

[1] The table lists all states with a state law in one or more of four criteria and those that have some activity at the local level. The following are not listed in the table because they have neither a state law or local activity: Arkansas, Delaware, Hawaii, Idaho, Mississippi, Missouri, Nebraska, Nevada, North Dakota, Oklahoma, South Dakota, and Washington DC and the U.S. territories.

[2] The database of schools that have adopted the policy is tracked by Improving Kids Environment and can be found at http://www.ikecoalition.org/Pesticides_Schools/School_Pesticide_Status2.asp

[3] While the state law provision applies to all school districts in the state, this school /district has adopted pest management practices (without a policy) that exceeds the state law.

[4] The law states that pesticides cannot be applied "where exposure may have an adverse effect on human health." Although this language is open to interpretation, it is a stronger safety standard than contained in the *Federal Insecticide, Fungicide and Rodenticide Act (FIFRA)*, which protects for "unreasonable adverse effects."

[5] New Mexico law requires signs to be posted for emergency pesticide applications only.

Universal notification is true right-to-know and requires fewer school resources. One of the most protective examples of prior written notification language is incorporated into the pest management plan of Carl Sandburg Elementary School, Lake Washington School District, in Washington State. This school requires 72-hour universal prior notification, except for containerized baits. The school has also established a registry of chemically sensitive students, staff and others who wish to be informed of pesticide use two weeks in advance of the proposed application.

A total of 7,335 school districts, or 43.1 percent of the 17,000 U.S. school districts, require prior notification of pesticide applications. (See Figure 2.) Overall, 7,076 school districts, or 41.6 percent, are state mandated to provide prior written notification[11] and 259 school districts, or 1.5 percent, have voluntarily adopted such a policy. Of the 7,076 that have state mandates, 846 are required to provide universal notification,[12] 3,859 are required to provide notification via a registry,[13] 2,044 leave the decision on the form of notification to the schools,[14] and 327 have a notification system that is a modified version of both types of notification vehicles.[15] In addition, seven school districts have adopted policies that contain prior notification provisions that exceed their state law.

Of the 259 voluntary programs, 257 school districts have established registries, one school district provides universal notification, and one school district does not specify the type or timing of prior notification. Again, outside of the 253 Indiana school districts, only six school districts have a voluntary policy in place on this aspect.

Although there are no state laws that establish an appeal process for parents to challenge a school's pesticide use, one

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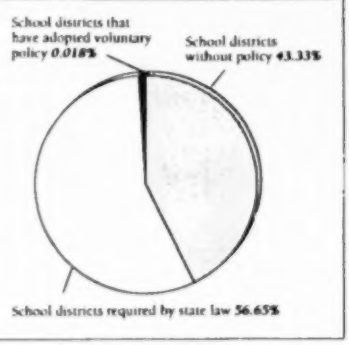
Figure 3.
U.S. School Districts That Require Posting Notification Signs


School districts that have adopted voluntary policy 0.018%
School districts without policy 43.33%
School districts required by state law 56.65%

school district and one individual school have added this provision to their school pest management policy. This allows concerned parents and community members to formally appeal to the school district to withdraw the proposed pesticide application. The Shoreline School District in Washington State allows parents the right to appeal the use of a school pesticide, in writing, up to 72 hours prior to the application.

Posted notification signs

Posted notification signs warn those at school when and where pesticides are being or have been applied. Posting signs, whether for indoor or outdoor pesticide applications, is critical because of the extensive period of time students and school employees spend at school and the residual amount of the pesticide that is left behind after the application is complete. Prior posting enables people to take precautionary steps to avoid the exposure.

A total of 9,634 school districts, or 56.7 percent of the 17,000 U.S. school districts, are required to post signs for either indoor or outdoor pesticide applications or both. Nearly all of these (9,631) are state mandated,[16] while three, or 0.018 percent, have voluntarily adopted such a policy. (See Figure 3.) A total of 4,179 school districts, or 24.6 percent, are required to post notification signs for both indoor and outdoor pesticide applications.[17] Whereas, 1,497 school district, or 8.8 percent, are only required to post signs for indoor applications[18] and 3,955 school districts, or 23.3 percent, are only required to post signs for outdoor applications.[19] Of the 9,634 school districts that have a state mandate for posting signs, 14 school districts have adopted a policy that contains posting provisions that exceed their state law.

One of the largest school districts in the nation, Los Angeles Unified School District in California, has an exemplary requirement for posting notification signs. This district is required to post signs "at least 72 hours before and for five (5) half-lives after any pesticide application." For emergency applications, signs are posted at the time of the pesticide application.

Pesticide use restrictions

Limiting when and what pesticides are applied in and around schools can significantly reduce pesticide exposure. Many poli-

Pesticide Use Policy
Oak Harbor School District, Washington

Oak Harbor School District, Washington prohibits the following from being used at its schools if the pesticide:

- is classified as highly acutely toxic (Hazard Category I or II) by the US EPA (signal words DANGER or WARNING);
- is a restricted use pesticide;
- contains ingredients that the US EPA has not evaluated and determined to contain no possible, probable, known or likely carcinogens;
- contains reproductive toxicants (California Proposition 65 list);
- contains ingredients listed by Illinois EPA as known, probable or suspected endocrine disruptors;
- contains nervous system toxicants (neurotoxic by mode of action—defined as pesticides in the organophosphate, carbamate, pyrethrin, and pyrethroid classes of chemicals);
- contains ingredients that have a soil half-life of more than 100 days;
- contains ingredients that have high or very high mobility in soil, according to Groundwater Ubiquity Score (GUS) Index; and,
- is labeled as toxic to fish, birds, bees (except products used specifically to control bees in situations where they pose a hazard to humans), wildlife, or domestic animals.

No pesticides will be used if the District does not have information on all the pesticide's active ingredients. Routinely scheduled pesticide applications and indoor fogging and space spraying are prohibited. Least-toxic pesticides may be used as a last resort. These are pesticides meeting the following criteria:

- The pesticide's active ingredient has a soil half-life of 30 days or less (unless the active ingredient is a mineral);
- The pesticide's active ingredient has extremely low or very low mobility in soil; and,
- The pesticide is not labeled as toxic to fish, birds, bees (except products used specifically to control bees in situations where they pose a hazard to humans), wildlife, or domestic animals.

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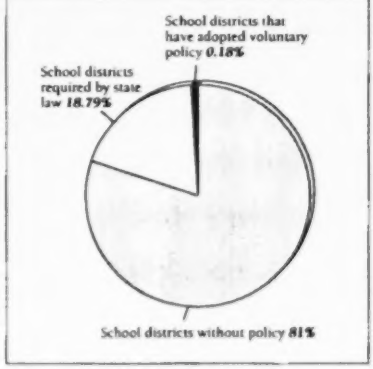
cies have embraced the notion that pesticides should never be applied when students or staff are, or likely to be, in the treated area within 24 hours of the application. Certain types of pesticides, such as carcinogens, endocrine disruptors, reproductive toxins, developmental toxins, neurotoxins and pesticides listed by EPA as a toxicity category I or II pesticide should never be used around children.

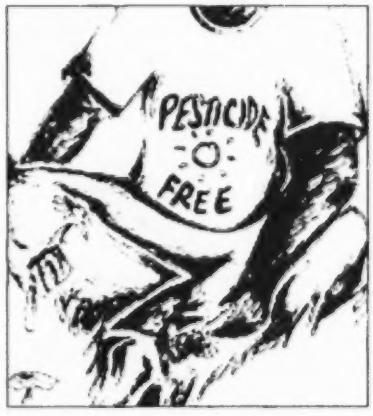
A total of 3,224 school districts and two individual schools, or 18.9 percent of the 17,000 U.S. school districts, have policies that prohibit certain pesticides or pesticide practices. (See Figure 4.) Overall, 3,194, or 18.79 percent, are state mandated[20] and 30 school districts and two individual schools, or 0.18 percent, have voluntarily adopted such a provision. Eleven school districts have pesticide use restrictions that exceed the requirements of their state law. An additional 29 school districts and five individual schools claim to prohibit certain pesticide practices without having an official policy.

Figure 4.
U.S. School Districts With Pesticide Use Restrictions


School districts that have adopted voluntary policy 0.18%
School districts required by state law 18.79%
School districts without policy 81%

A total of 7,335 school districts, or 43.1 percent of the 17,000 U.S. school districts, require prior notification of pesticide applications.

On the state level, most pesticide use prohibition provisions pertain to pesticide reentry intervals where the treatment area must remain unoccupied for a certain number of hours. Only one state, Massachusetts, with its 303 school districts, bans the use of certain high hazard pesticides from being applied at schools. On the school district level, policies are more likely to include a provision banning high hazard pesticides than establishing a reentry interval.



Oak Harbor School District in Washington State has a policy that includes a very comprehensive criteria list for prohibited pesticides. In fact, many school districts in Washington have adopted the same or similar set of criteria for high-hazard pesticides.

Some school districts have adopted pest management practices that go beyond IPM by eliminating the use of even the least toxic pesticides. These schools rely on non-toxic methods of pest management. The following are a few examples.

- Dragonflye Charter School in Arizona is a "chemically free" school where pesticides, toxic-cleaning products, wallpaper paste, paint and fragrances are prohibited.
- Radnor Township School District in Pennsylvania adopted a "natural" pesticide program where schools use only non-toxic methods of pest control.
- Lincoln Elementary School in Washington adopted a zero pesticide policy where only organic fertilizers are used.

These schools exemplify the fact that eliminating hazardous chemicals does not negatively impact their ability to manage pest problems.

Local watchdogs

Both the adoption of policies and enforcing their implementation require vigilant monitoring and public pressure. School administrators are more conscious of their pest management practices if they know parents are concerned and tracking their program. It is important to note that a state or school district policy requiring IPM or notification procedures does not ensure that these laws are being adequately implemented. Therefore, parents and community members are critical in helping school districts implement and improve their pest management practices. Community-based efforts to adopt safer school pest management practices have been central to the effort to protect children from pesticides.

Website resource

www.beyondpesticides.org

To facilitate the movement to safer practices, Beyond Pesticides has developed a comprehensive internet resource devoted to state and local school pesticide policies. The website contains information on every state's school pest management law as well as information on the 367 school districts and 16 individual school policies that go beyond state law. Information about pesticide use in schools, state laws regarding school pesticide use, summaries and copies of local school districts' policies, and contact information for local organizations that are involved in the school IPM movement is available at the *State and Local Policies* section of Beyond Pesticides' *Children and Schools* program page found at www.beyondpesticides.org/schools/schoolpolicies.

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Conclusion

Although this study shows that a majority of school districts nationwide have adopted safer pest management practices, there are still large gaps within state and school district programs throughout the country where children go without adequate protection. The movement at the local level to provide a safe learning environment for children is growing as communities reject chemical-intensive approaches to pest management and embrace non-toxic alternatives.

Editor's note: If you are aware of a school district or individual school that has a policy and is not listed in this study, please forward it to us. For additional information on school pesticide use, contact Beyond Pesticides or see our website at www.beyondpesticides.org.

Endnotes

[1] National Research Council, National Academy of Sciences. 1993. *Pesticides in the Diets of Infants and Children*. National Academy Press. Washington DC.

[2] Shettler, T., et al. 2000. "Known and suspected developmental neurotoxicants." *In Harms Way: Toxic Threats to Child Development*. Greater Boston Physicians for Social Responsibility: Cambridge, MA; Bushnell, P., et al. 1993. "Behavioral and Neurochemical Effects of Acute Chlorpyrifos in Rats: Tolerance to Prolonged Inhibition of Chloinesterase." *Journal of Pharmacology Exper Thera* 266(2): 1007-1017; Volberg, D. et al. 1993. *Pesticides in Schools: Reducing the Risks*, Robert Abrams, Attorney General of the New York State Department of Law, Environmental Protection Bureau, NY; Guillette, E., et al. 1998. "An Anthropological Approach to the Evaluation of Preschool Children Exposed to Pesticides in Mexico." *Environmental Health Perspectives* 106(6):347-353.

[3] Gurunathan, S., et al. 1998. "Accumulation of Chlorpyrifos on Residential Surfaces and Toys Accessible to Children." *Environmental Health Perspectives* 106(1); Fenske, R. et al. 1990. "Potential Exposure and Health Risks of Infants following Indoor Residential Pesticide Applications." *American Journal of Public Health* 80(6): 689-693; Wright, C., et al. 1981. "Insecticides in the Ambient Air of Rooms Following Their Application for Control of Pests." *Bulletin of Environmental Contamination & Toxicology* 26: 548-553; Nishioka, M., et al.1996. "Measuring Transport of Lawn-Applied Herbicide Acids from Turf to Home: Correlation of Dislodgeable 2,4-D Turf Residues with Carpet Dust and Carpet Surface Residues." *Environmental Science Technology* 30: 3313-3320; U.S. EPA. 1990. "Nonoccupational Pesticide Exposure Study" (NOPES). Atmospheric Research and Exposure Assessment Laboratory. Research Triangle Park, North Carolina. EPA/600/3-90/003; Lewis, R., et al.1991. "Determination of Routes of Exposure of Infants and Toddlers to Household Pesticides: A Pilot Study." Methods of Research Branch, U.S. EPA. Research Triangle Park, NC.

[4] Owens, K and J. Feldman. 2002. "Schooling of State Pesticide Laws – 2002 Update." *Pesticides and You* 22(1): 14-17.

[5] National Center for Education Statistics, Office of Educational Research & Improvement. U.S. Department of Education. http://nces.ed.gov/ccd/.

[6] The database of schools that have adopted the policy is tracked by Improving Kids Environment and can be found at http://www.ikecoalition.org/Pesticides_Schools/School_Pesticide_Status2.asp.

[7] Beyond Pesticides. 2002. "Schools Save Money With Integrated Pest Management: A Beyond Pesticides Factsheet." *Pesticides and You* 22(1): 18-19.

[8] Thirteen states require schools adopt IPM: Florida, Illinois, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, New Jersey, Pennsylvania, Rhode Island, Texas, and West Virginia. However, Maine, New Jersey, and Pennsylvania's laws do not go in to effect until the 2003-2004 school year. Illinois is also included, even though the state law allows school districts to opt out of the IPM requirement if they show it is too costly. Beyond Pesticides included Illinois because all available data shows that IPM costs the same as, if not less than, a conventional pest management program.

[9] EnvyroSafe, Inc., PO Box 151011, Grand Rapids, MI 49515, 1-800-226-0418, envyrosafe@aol.com, http://envirosafeipm.com; Get Set, Inc., 2530 Hayes St., Marne, MI 49435, 1-800-221-6188, steve@getipm.com, http://www.getipm.com; Praxis, 2723 116th Ave., Allegany, MI 49010, 616-673-2793, praxis@allegan.net, http://praxis-ibc.com. See *Safety Source* to get a listing of least toxic pest management companies at www.beyondpesticides.org.

[10] The four states are California, Connecticut, Montana, and New York. New York is included in this list because its school districts are only required to develop an IPM plan, whereas the list of school districts required to have an IPM policy are required to implement an IPM program. States that have developed materials on school IPM, such as Hawaii, Minnesota, Oklahoma, South Carolina, Tennessee and Wisconsin are not included. Only those states that have passed acts or regulations recommending schools adopt IPM are included.

[11] Twenty-one states require prior written notification of school pesticide applications: Alaska, Arizona, California, Connecticut, Illinois, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, New Jersey, New Mexico, New York, Pennsylvania, Rhode Island, Texas, Washington, West Virginia and Wyoming.

[12] This represents the number of school districts in Arizona, New Jersey and Wyoming. This does not include schools required to provide universal notification of the school's pest management program only at the start of the school year.

[13] This represents the number of school districts in California, Connecticut, Kentucky, Louisiana, Michigan, Minnesota, New Mexico, New York, Rhode Island, Texas and West Virginia.

[14] This represents the number of school districts in Alaska, Illinois, Maine, Pennsylvania and Washington.

[15] This represents the number of school districts in Maryland and Massachusetts.

[16] Twenty-eight states have requirements regarding schools posting pesticide notification signs: Alaska, Arizona, California, Colorado, Connecticut, Florida, Georgia, Illinois, Indiana, Iowa, Kentucky, Maine, Maryland, Massachusetts, Michigan, Montana, New Hampshire, New Jersey, New Mexico, New York, Ohio, Pennsylvania, Rhode Island, Texas, Vermont, Washington, Wisconsin and Wyoming.

[17] Fourteen states require posting signs for indoor and outdoor applications: Alaska, Arizona, California, Georgia, Maine, Maryland, Massachusetts, Michigan, New Jersey, New Mexico, Pennsylvania, Washington, Wisconsin and Wyoming.

[18] Two states require posting signs for indoor applications only: Montana and Texas.

[19] Twelve states require posting signs for outdoor applications only: Colorado, Connecticut, Florida, Illinois, Indiana, Iowa, Kentucky, New Hampshire, New York, Ohio, Rhode Island and Vermont

[20] Eleven states require schools to prohibit certain pesticides or pesticide practices: Alaska, Connecticut, Louisiana, Massachusetts, Michigan, New Hampshire, New Jersey, New Mexico, Pennsylvania, Texas and West Virginia.

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